Vol III. No 2

THE P·T·REVIEW

PUBLISHED QUARTERLY BY
THE AMERICAN PHYSIOTHERAPY ASSOCIATION
June, 1923

Regulation Physiotherapy Uniforms

Dark Blue with White Collar and Cuffs

For Service in U. S. Government

Made to Order of Thoroughly Shrunken Goods

Send for Measurement Blank

We make Nurses' Uniforms in Many Styles of All the Popular Materials

The Uniform Shop

Tel. Back Bay 5067 **739 Boylston St. - Boston, Mass.**

Course in Physiotherapy

October 1, 1923 to June 1, 1924

An eight months' intensive course in Massage, Electro-, Hydro-, Mechano-, and Thermotherapy. Unequalled opportunity in treatment of all nervous and orthopaedic diseases. Early registration is advised. Circular on request.

Philadelphia Orthopaedic Hospital
and
Infirmary for Nervous Diseases
17th and Summer Streets
Philadelphia, Pa.

Read Our "Ads" Carefully

These Firms are the Best, Specializing in P. T. Equipment

THE
P·T·REVIEW

PUBLISHED QUARTERLY BY
THE AMERICAN PHYSIOTHERAPY
ASSOCIATION

June, 1923

OFFICERS AND EXECUTIVE COMMITTEE
Of the A. P. T. A. for 1923-24

President

INGA LOHNE	142 Davis Ave., Brookline, Mass.

Vice-Presidents

DOROTHEA BECK	Orthopedic Hospital, Orange, N. J.
LILY GRAHAM	Children's Hospital, Sunset Blvd., Los Angeles, Cal.

Treasurer

JANET B. MERRILL	300 Longwood Ave., Boston, Mass.

Secretary

WINIFRED TOUGAS	9 Bellingham St., Newton Highlands, Mass.

Executive Committee

CLARA EISENBREY	2914 Claremont Rd., Shaker Hts., Cleveland, Ohio.
LEAH THOMAS	372 Marlboro Street, Boston, Mass.

EDITORIAL STAFF

Editor-in-Chief

ELIZABETH WELLS	46 Waverly St., Brookline, Mass.

Associate Editor

JUANITA METHERALL	142 Berkeley St., Boston, Mass.

Circulation Manager

WINIFRED TOUGAS	9 Bellingham St., Newton Highlands, Mass.

Business and Advertising Manager

THOMAS BURNS	419 Boylston St., Boston, Mass.

Advertising Assistant

LOUISE ROBINSON	P. H. S. No. 30, Chicago, Ill.

Contributing Editors

LEAH THOMAS	372 Marlboro St., Boston, Mass.
MARGARET BLAKE	Los Angeles, Cal.
ELEANOR FISHER	U. S. V. H., No. 92 Jefferson Barracks, Mo.
EMMA VOGEL	Ward 76, Walter Reed, Washington, D. C.
MARION SWEETSER	611 So. Burlington St., Los Angeles, Cal.
HAZEL FURSCOTT	240 Stockton St., San Francisco, Cal.
EMILY WELLINGTON	V. B., Grand Central Palace, New York, N. Y.
LILLIAN GLEASON	1895 E. 93d St., Cleveland, Ohio.

IMPORTANT NOTICE

The P. T. Review is published quarterly by the American Physiotherapy Association. Membership includes the Review, but subscription may be obtained by sending one dollar ($1.00) to the Circulating Manager.

All material for the Review must be sent to the Editor-in-Chief by the first day of May, August, November, February.

For advertising rates address the *Advertising Manager.*

Editorials

National Convention of 1923

THERE will be no doubt as to the success and interest of the Convention of the A. P. T. A.'s and the California association of P. T.'s, with such a collection of famous speakers as the Committee has secured. Their programme includes, Doctors McKenzie, Albee, Goldthwaite, Lowman, and Wilson, and there will be a clinic at the Hahneman Hospital. The Executive Committee of the Convention extend a cordial invitation to all Physiotherapists and it is hoped that all who possibly can will take advantage of this opportunity to hear so many renowned men. We wish it were possible for each local organization to send a delegate, but if this is not practical at the present time we will hope for better things in the future as the organizations gain in strength and finances.

At one of the local organizations there has been much discussion as to whether it would not make a stronger organization to have the local associations incorporated with the National body and become chapters of it. It would mean that there would be one Constitution of the National organization and the chapters would conform to its regulations, all members of the local chapters would be members of the National Organization. The consensus of opinion was in favor of becoming affiliated as it would, they feel, tend to make a more stable progressive organization and it would lead to a standardization of work. It would tend to concentrate thought and effort on the essential lines of advancement and development, instead of wasting time over a mass of unimportant details of local administration. It would do away with the amiable but ineffectual provincialism of the separate societies. We hope this matter will be thoroughly discussed at the Convention and, if possible, voted upon, as we feel it is of vital importance to all.

Explaining a Talkative Era

George Mathews Adams says "words too often smother ideas." More frequently, however, they cover up the lack of them—*Philadelphia Inquirer.*

PROGRAMME FOR THE ANNUAL MEETING OF THE CALIFORNIA ASSOCIATION OF PHYSIOTHERAPISTS AND THE AMERICAN PHYSIOTHERAPY ASSOCIATION

Saturday, June 23, 2:00 P. M.

"The Curative Workshop in Rehabilitation" (Illustrated by Moving Pictures and Lantern Slides).....Fred. H. Albee

"How to Keep Ourselves Fit".....Joel E. Goldthwait

"The Place of Manipulation and Corrective Gymnastics in Physiotherapy Treatment".....R. Tait McKenzie

"Physiotherapy in Relation to Orthopedic Problems of the Shoulder Girdle".....C. Le Roy Lowman

"The Place of the Physiotherapist in the Treatment of Infantile Paralysis".....John C. Wilson

Business Meeting

Tuesday, June 26, 2:00 P. M.

Physiotherapy Clinic.....Hahneman Hospital

PHYSIOTHERAPY IN ORTHOPEDICS

By CHARLES R. BROOKE, M. D., P. A. Surgeon Reserve United States Public Health Service. Chief, Physiotherapy Clinic, U. S. Veterans' Bureau, District No. 2, New York City, N. Y.*

PHYSIOTHERAPY in Orthopedics has been used successfully and extensively during and after the World War in Military Hospitals and Government Institutions. My experience extends over a period of about six years actively engaged in Military Orthopedic work with a close follow up of patients receiving Physiotherapy. My work started in the English War and Base Hospitals during the World War and followed by continuous work in the U. S. Army Hospitals, U. S. Public Health Service Hospitals and finally in the U. S. Veterans' Hospitals and Clinics. During the past two years, have devoted all my time to general Physiotherapy, and have determined that modern scientific physical

modalities properly combined with Orthopedic Surgery and Prosthesis is now a very important part of the Orthopedists' armamentarium.

The large number of Orthopedic disabilities resulting from gunshot wounds and other injuries among the Service and ex-Service men has presented difficult tasks to solve. It has been largely through the medium of Physiotherapeutic modalities that these complicated disabilities and marked deformities have been successfully treated and maximum improvement obtained. It can be certainly said that Physiotherapy in conjunction with modern medicine and surgery has been a big factor in rehabilitating our maimed ex-Service men to become useful citizens and successful in various lines of industry. Since space and time will not permit of case histories, individual case reports, progress notes and results, consideration will be given to the modus operandi of the more important physical means, techniques used, the action and reactions on tissues and the nature of cases successfully treated.

We have at our disposal the following Physiotherapeutic means, namely, Massotherapy, Thermotherapy, Hydrotherapy, Actinic Ray therapy, Electrotherapy and Mechanotherapy. In the application of all these remedies, it is indeed an important factor to consider the types of inflammatory reactions.

INFLAMMATION, as we all know, is nature's effort in preventing and repairing damage done or in the process of being done by an irritant in the living tissues of the body. There are three kinds of inflammation, *adequate, inadequate* and *excessive.* When the reaction is an *adequate* inflammation, recovery occurs by resolution. An *inadequate* inflammation is a progressive acute, subacute and ultimately a chronic inflammatory process or disease condition. An *excessive* inflammatory reaction is an acute form of inadequate inflammatory reaction occurring less frequently and producing stasis, necrosis and granulated tissue. The application of physical therapeusis to the body is effective only as it controls inflammatory reactions. It is of the utmost importance to make an accurate diagnosis of existing condition, which should include X-rays and Laboratory findings, together with all necessary Clinical evidence pertaining to the case before instituting physiotherapy treatments. Several different physical treatments should be properly combined in sequence to produce accumulative effect; single

treatments prescribed at intervals are to be condemned.

The oldest and most generally known modalities used are massage and radiant light and heat, commonly known as baking, which term has been almost entirely discarded in recent years as being inappropriate and misleading. Manual massage with its sequence of movements, includes active, passive, assistive and resistance exercises, special manipulations, remedial and corrective gymnastics. Following Orthopedic operations, major and minor in character, the use of radiant light and heat and massage cannot be over-estimated. Same can be applied in conjunction with the wearing of splints and bi-valved casts, which can be removed for treatment and reapplied immediately following.

Radiant light and heat is applied by the different styles and sizes of radio vitant applicators and deep therapy lamps. These applicators are equipped with four or more carbon or Mazda bulbs of 60 to 150 Watts each, depending upon part treated and action desired. This form of convective heat produces a superficial hyperæmia, through warming of superficial tissues and relaxes tense musculature, preparatory to the giving of massage and other treatments. Also given for derivative effects, for relief of pain and irritation, in Neuritis, Myositis and Fibrositis, which often accompany conditions of an Orthopedic nature.

Where there is pain, congestion and swelling after operation, the deep therapy lamp which consists of a 1500 Watt Cobalt blue bulb, which filters out many of the long heat rays, has a decided sedative effect on the tissues, producing a deep, effective, hyperæmia relieving the localized congestion. Also relieves pain by lessening nervous sensibility and regulating functional activity of the tissues. Heat produces a reflex effect upon blood supply, which is now well understood, various superficial and cutaneous areas being reflexly related with deep internal areas. Where there is superficial infection, unhealthy and unhealed scars, with draining sinuses *insitu* the Actinic Rays are used, following the deep therapy radiation for bactericidal and healing action. Massage and exercises should follow radiant light and heat and deep therapy applications to reduce swelling and congestion by enhancing circulation and absorption, and further relaxing contracted and spastic musculature. The applying of suitable supports is necessary after treatment in some cases. Fracture cases should receive treatment as early as possible in the form of

radiant light and heat or hot whirlpool baths followed by light massage of part, including muscles above and below site of fracture, no movement or exercises at *first*. The employment of movements and exercises are guided entirely by X-ray findings and progress of the case; same should be started sufficiently early to obtain complete function in the minimum of time.

In cases of flail joints, where operative procedures are contra-indicated and after repeated attempts by surgical repair fail to be successful, the use of Massotherapy with selective exercises and movements persistently and judiciously applied to muscles acting on the joints, steadily develops muscle power and co-ordination. The development of muscle power with gradual increased range of motion obtained in these cases, surprising to say, gives an extremely useful extremity. The use of simple mechanotherapy aids materially in muscular re-education and function of disabled joints.

Corrective exercises and remedial gymnastics are valuable adjuncts in treatment of functional scoliosis, lordosis and static strains of back with postural defects.

Mechanotherapy is a valuable physical means for muscular re-education, development of power, co-ordination and mobility of joints, following injuries and gunshot wounds with impaired function of muscles and joints.

MASSAGE treatment of amputation stumps should be started as soon as scars are healed, preceded by radiant light and heat or hot whirlpool baths. The massage at first should be light, increasing as the tolerance of the tissues permit. EXERCISES are valuable, active and passive movements are absolutely necessary to prevent deformity, limitation of motion and atrophy of tissues from disuse. As much pressure and force as is possible should be made to end of stump to lessen liability of exostosis formation. These factors are all important to render the stump suitable for weight bearing when an artificial limb is supplied.

MECHANICAL VIBRATION is a useful modality. It gives a regular stroke with deep massage and percussion effect and is more efficient than the manual massage in certain localities. Vibration to the spine is particularly effectual in all forms of back aches, lumbago, Sacro-Iliac and Lumbo-Sacral strains, with Chronic Myositis and Myalgias. These conditions should be first treated with diathermia or deep therapy before vibration is given.

It is important that each treatment be given sufficient time to produce good results, and for this reason, of course with certain exceptions, the average treatment period is twenty minutes, which is really a short intensive application; longer treatments are sometimes necessary to produce certain effects and reactions desired. Treatments of short duration are to be condemned, results are prolonged and unsatisfactory in the end.

LOCAL hydrotherapy is administered by the submersion of the extremities in the latest designed arm and leg whirlpool baths, equipped with adjustable ejector and aerater. The nature of the cases benefited by this form of treatment are: gunshot wounds of the extremities, recent fractures, joint injuries, painful amputation stumps with swelling and œdema, adherent painful scars, nerve injuries with peripheral paralysis and neuritis. The importance of the whirlpool baths in these conditions cannot be over-estimated, for the following reasons: Gives a gentle, soft, soothing massage to the affected areas; relaxes muscle spasm; reduces œdema of soft parts and effusion of joints; relieves pain about adherent scar tissues; produces a sedative effect to nerves and increases circulation, thus relieving cold, sweaty, cyanosed conditions of extremities. This treatment has been found to be of great benefit in Pes Planus and allied disabilities of the feet, as a preliminary treatment before receiving massage, forcible exercises and manipulations; also increases the conductivity to electrical currents. This, in my experience, materially hastens muscles to respond to galvanism and sinusoidalism in old peripheral nerve lesions with partial or complete paralysis.

Entering upon high frequency phenomena, it is well to understand the oscillatory character of the condenser discharge. This is brought about by the sudden disruptive discharge causing a breaking down of the cohesion between the particles which are expelled in a diffuse oscillatory manner across the spark gap, which controls the current flow.

DIATHERMIA (thermo-penetration) a direct form of high frequency current of high amperage and low voltage is obtained from the D'Arsonval or bi-polar current of a high frequency machine. This form of deep heat penetration can be given in two ways, sedative and stimulative. And experience has shown that it

is the treatment par excellence in bone and joint diseases and injuries.

SEDATIVE DIATHERMIA, which type is usually indicated, is where a long continuous steady heat is given through affected part usually to tolerance of patient. The amount of heat varies with resistance, time of application, part treated and size of electrodes, bone structures give greatest resistance. The current is stepped up and down to zero very gradually, allowing five minutes to reach the maximum and five minutes to be reduced to zero. The average duration of treatments should be at least twenty minutes, in some cases longer, never shorter.

STIMULATIVE DIATHERMIA is much less frequently used, chiefly indicated and used successfully in promoting callous formation in sluggish healing fractures and in gunshot wounds where there is loss of bone substance. In this form of treatment the current is stepped up rapidly and reduced abruptly by closing spark gap suddenly. The object being to stimulate and irritate the bone substance by short intensive flow of current to produce osteogenesis. The treatment should require only one-third the time and about one-third the dose of a sedative treatment.

The following are the EFFECTS OF DIATHERMIA: Vary as to time of application for effective dose; varies directly as square of amperage, for example, by raising the amperage from 250 milli-amperes to 750 milli-amperes, which is three times the amperage, but is nine times as much heat produced in the tissues; varies as resistance of part treated, the more dense the tissue the greater the resistance. The smaller electrode surface is active, the larger electrode surface is inactive. This is brought about by the current being concentrated from the large electrode on to the small electrode with greatest heat formation; the current from the small electrode is diffused onto the large electrode with less heat formation. In electrodes of the same size the maximum degree of heat is half way between electrode surfaces. The skin is very little affected by the passage of the current in diathermia. The heat is concentrated in the sub-tissues and bone substances. Do not use more than 1000 milli-amperes to every sixteen square inches of electrode surface. The voltage and frequency for therapy ranges above 10,000 volts with a frequency of above 200,000 oscillations per second. The

frequency must always be over 10,000 per second to be safe; under this will cause tetanic contractions of the tissues.

The *electrode material* is a composition block tin metal 22 gauge (called by some Crooks Metal) which is easily cut and shaped to desired areas. The best clips used to connect rheophores to D'Arsonval posts are the well-known Fahnestock type; any style can be used but not recommended. The electrodes are applied by the cuff or plate methods, the size and shape depending on part treated and nature of existing pathology. The soaping of electrodes for treatment and preparation of the skin over part to be treated should be carefully and judiciously carried out. This makes a difference between a good, pleasant and effectual treatment and a burning, stingy, and occasional shocking, ineffectual treatment. The electrodes are first selected for part to be treated and are placed in warm water for a minute or two; during this time skin over area to be treated is thoroughly moistened with soap and water. The surface of the warm electrodes to be applied to the skin is now thoroughly moistened with soap and water and applied over prepared area of skin. Always be sure that electrodes are in perfect contact with skin and fit in perfect co-aptation over bony prominences. This is necessary to prevent the jumping or arcing of the current from edges of electrode to skin, which produces a disagreeable, prickly, burning sensation and subsequent development of a burn. In treating joints of the hands and feet, it is recommended that diathermia be given by placing the hand or foot in a small amount of salt water in a suitable white enamel basin. This method has proved to be more efficient than by applying the electrodes to the small joints where only a small amount of current could be given, even then with great liability of current arcing and producing a burn. When treatments are given to arms and legs in water, one electrode is placed in the water and attached to rheophore, the other electrode in form of a cuff is placed above and around wrist or ankle joints, connections to machine are made as usual. This form of application permits of sufficient milli-amperage to obtain effectual results and further permits the concentration of current to particular affected digit by raising others out of the water, leaving affected one to receive all the current. When all digits are affected, alternate the concentration of current by lifting first one and then the other out of the water. A small

amount of salt water to cover fingers or toes is all that is necessary; too much water makes resistance too high.

The following are the important actions of SEDATIVE DIATHERMIA on tissues: produces heat in accordance with resistance of part; increases the local blood supply; dilates the arterioles and produces hyperæmia of deep tissues and bone substance; disintegrates organized or partially organized articular and periarticular exudates; dissolves excessive painful callous formation and breaks up fibrous ankylosis and adhesions; a decided sedative, relieves acute pain in Myositis and Neuritis, relaxes tense and spastic musculature.

The nature of cases materially and palpably benefited by DIATHERMIA are: all types of gunshot wounds with fractures and subsequent deformities of bones and joints; Pan and Hemi fibrous Ankylosis of joints with Articular and Periarticular adhesions and exudates after long immobilization in splints and plaster casts; acute and sub-acute Articular Rheumatism and all Arthritic conditions with deformity and limited range of motion; Acute sprains and strains of joints; Hypertrophic and Rheumatoid Arthritis benefited depending on duration and extent; Traumatic Myositis and Neuritis accompanying joint and bone injuries; Bone infections, chronic Osteomyelitis, Osteitis and Periosteitis.

DIATHERMIA has a marked relaxing effect on ligaments and muscles acting on joints, preparing same for massage, active and passive exercise with forcible bending, stretching and special manipulations. Indicated in joint pathology with limitation of normal range of motion. Sacro-Iliac injury with slipping of the joint and strain is successfully relaxed and manipulated back in position. The cross fire method of diathermizing joints is used by the writer with good success, particularly in knee joint disabilities. The seance of this method is carried out by the sequence of four different applications of electrodes in the following way. The first treatment is given by the cuff method, cuff electrodes are placed around leg just below patella ligament and around thigh just above joint articulation. The second application is carried out by placing plate electrodes above and below the knee diagonally opposite. The third treatment is given by reversing the electrodes and in the fourth and last application, the electrodes are placed one over knee cap and the other in the popliteal space. Duration of each application and

treatment is twenty minutes, repeated as often as indicated; alternate days should be sufficient in the average case. The seance is repeated until maximum benefit has been attained. This thorough diathermizing of a joint gives satisfactory results where there is a diffuse articular and periarticular Arthritis and fibrosis with effusion and pain. It must always be remembered in the application of electrodes, that the smaller active electrode is placed over site of greatest disability; the larger or inactive electrode opposite bringing involved area between them with edges of electrodes far enough apart to prevent arcing of current. Diathermized areas should always be followed by one of the following modalities, massage and exercises, sinusoidal wave, rhythmic faradic or static wave, sparks and brush discharge. The combination with any of the above modalities hastens absorption, decongests the tissues, relieves pain and gradually restores the tissue to normal consistency and hastens the return of normal function. Diathermia is contra-indicated where there is walled in pus, liability of hemorrhage, active tuberculosis of bones and joints and in malignancy.

The unipolar or Tesla current is used occasionally in cases of an Orthopedic nature in conjunction with other modalities. It is a current of high voltage and relatively low amperage, given in two forms, sedative and stimulative with vacuum and non-vacuum electrodes. The non-vacuum is preferred and is four times more efficient. The sedative form is given with a mild current with the electrode touching and moved about over the surface treated. The stimulative form is given with more current and the electrode raised one to three inches above the surface treated producing a sparking effect, intensity of which varies with condition. The combined sedative and stimulative treatment is particularly good in Phlebitis, Venous Stasis, Varicose Veins and Trophic condition of extremities. The sedative form, as the name implies, relieves pain and produces superficial hyperæmia. The stimulating form decongests and relaxes superficial tissues and increases circulation by sparking effect.

My desire in this article is not to hail Physiotherapy as a panacea, but to emphasize the efficacy and potency of physical forms of effective therapeutics, scientifically applied in Orthopedic conditions. There is no hard and fast rule for prescribing and adminis-

tering the various physical modalities. Each and every case should be treated upon its individual merits.

**Contributed by the New York Physiotherapy Association.*

Book Notice

W. B. Sanders & Co., Philadelphia, Pa., are publishing a revised edition of R. Tait McKenzie's book on Exercise. ($5.00).

Here and There

Miss Anna Voris, who has had charge of the P. T. Department at the Marine Hospital at Norfolk, Va., has been transferred to the P. H. Hospital at Stapleton, Staten Island, N. Y.

Miss Mary Lee Castleman has resigned from the Veterans' Bureau and is now at the Marine Hospital, Baltimore, Md.

The new Veterans' Hospital No. 92 of the Ninth District was opened on March 15th at Jefferson Barracks, Mo. It is beautifully situated on the bank of the Mississippi River and has a capacity of 250 beds. Miss Eleanor Fisher, Chief Aide, has charge of the P. T. Department.

Miss Bulah S. Rader is now at the U. S. Marine Hospital No. 19, San Francisco, Calif.

Dr. William J. Tindall has charge of Reconstruction at the Veterans' Hospital No. 92, Jefferson Barracks, Mo., and the Out Clinic at St. Louis, Mo., succeeding Dr. A. T. Clopton, who was transferred to the Bronx, N. Y.

Marion Dawson has sailed for a six months' tour of Europe.

Course at Walter Reed

"The next course of instruction in Physiotherapy will be given at Walter Reed General Hospital, Washington, D. C., beginning Oct. 5, 1923, and continuing for a period of four months. It is open to women who have had at least two years' training in an approved school of Physical Education. For further information, apply to the Commanding Officer, Walter Reed General Hospital, Washington, D. C., Att. Department of Physiotherapy."

THE DEVELOPMENT OF PHYSIOTHERAPY

By F. B. GRANGER, M. D.

PHYSIOTHERAPY has been practised since the beginning of the world, yet was born in the World War. The instinctive rubbing of a bruise is primeval physiotherapy. The onward rush of the injured child to its mother for her pain relieving kiss, outrivals Coue.

Rubbing, which later developed into scientific massage, is coexistent with the creation of man. In 3000 B. C. the Chinese employed rubbing as a therapeutic measure. Hippocrates, 460 B. C., wrote concerning it. The Romans still further amplified its technic, and thus through the ages it grew until 1812, when Peter Henry Ling first placed it on a scientific basis. Metzger, Dr. Weir Mitchel and Dr. Douglas Graham (who published the first American work on massage) all added to its scientific rationale. Hand in hand with the development of massage went scientific muscle re-education or training, either as in the Lovett system without mechanical assistance, or as in mechanotherapy, the latter first developed by Zander and later simplified by Tait McKenzie.

Hydrotherapy began with the first bath taken by man. Homer sings of bathing, and cites the case of a cure by water of the wounded Hector. The Nile and the river Ganges were worshiped for their healing properties. In Greece, temples dedicated to Asklepios and his daughter Hygeia were thronged with the sick. Hippocrates extolled its virtues. The Roman baths need only to be mentioned. Galen, Pare, Priessnitz, Winternitz, Brand and Baruch are milestones in its line of progress.

Thales of Militis in 641 B. C. found that amber (in Greek, electron) acquired, by being rubbed, certain properties such as the power of attracting to itself light objects. It was not until 1600 A. D. that the foundation of the modern scientific electrotherapy was laid down by Dr. Gilbert of Colchester, England. On that date he published his treatise, "DeMagnete". John Wesley wrote the first book in English on Electrotherapy, and in his concluding remarks he says, "I would beg one thing . . . it is that they would none of them condemn they know not what, and that they would hear the cause before they pronounce sentence." Benjamin Franklin, the many-sided, developed the static machine, and while minister

to France, delighted the ladies of the court of France with static sparks. Galvani in 1791 discovered the current which bears his name. In 1831 Faraday likewise was responsible for faradism. In 1890 D'Arsonval evolved the high frequency. The X-ray followed in 1895, and a little later Tesla modified the D'Arsonval current. Dr. Kellogg of U. S. A. first introduced the use of incandescent lights for radiant baking. Finsen demonstrated the value of the ultra violet. But the advice of John Wesley fell on unheeding ears. Electrotherapy fell into disrepute among the medical profession. This was due to several reasons:

1. It was practically ignored by the medical curriculum except in one or two of the medical schools.

2. It was widely exploited by quacks and charlatans.

3. The enthusiasm of some of those really skilled in its use caused them to make unwarranted and exaggerated statements which further alienated the medical profession.

This latter reason prevails even to this day, and there are men who are confining themselves to some small specialized branch of electrotherapy such as static electricity or high frequency.

The discovery of radium and the evolution of the electron theory serve to place our knowledge of physics on a rational and sound basis. And thus, through the ages, developed the component parts of physiotherapy, but except in rare instances, each group was content to plod along in its own relatively narrow groove. With the onset of the World War the urgent need of hastening the return of the wounded to the front lines, or rehabilitating them sufficiently so that they could be given non-combatant duty, thus presumably relieving an able-bodied man, forced the unification of these separate entities. The Surgeon General of the United States Army, at one stroke completed their amalgamation when he defined physiotherapy as "Physical measures such as are employed under physiotherapy, including hydro, electro, mechano therapy, active exercises, indoor and outdoor games, and passive exercises in the form of massage." Thus was born modern physiotherapy. Then began the labor of standardizing methods and apparatus—the problem of installation, of which this building at the Walter Reed General Hospital is an example—the training of medical personnel, commissioned and en-

listed, and the creation of Reconstruction Aides in Physiotherapy. These latter insured the success of the movement. Their loyalty, their enthusiasm, their painstaking care, their professional ability, and their personality, not only were mighty factors in raising the morale and hastening the cure of the wounded in the hospitals, but also in proving to the too often skeptical medical officer the value of scientifically applied physical measures. All honor to the 815 Reconstruction Aides in Physiotherapy, picked from several thousand applicants. That the high standard set by Miss Marguerite Sanderson (the first Supervisor of Reconstruction Aides) was maintained, is shown by the fact that 95 per cent of the Aides were either graduates of normal schools of physical education, or were college graduates who had majored in physical education. These Aides all received at least six weeks further intensive training in physiotherapy before being accepted by the Army, and in addition, 10 per cent of the entire group were given special post graduate instruction in physiotherapy at Harvard under Major Lovett. You are heiresses to this high heritage, and I give it you strictly in charge never to let any act of yours sully it in the slightest degree.

By its deeds, physiotherapy has been (to use a commercial expression) sold not only to the Army, the Navy, the Public Health, the Veterans' Bureau, but also to civil life, such as civil hospitals, large employers of labor, the industries, and to insurance companies specializing in the workingmen's compensation branch. In civil hospitals, a department of physiotherapy should be maintained as a separate department. It should have a physician skilled in physiotherapeutic measures at its head, and cases should be referred to that department for such treatment as the director of physiotherapy feels is indicated. In military hospitals, under peace conditions, it is probably well that the department of physiotherapy should be under surgical auspices, but even here, a man trained in physiotherapy should be at the head of the department. The practice in some military hospitals, of referring cases to the department of physiotherapy with hard and fast prescritpions, cannot be too severely condemned. It is advisable that the medical personnel of the hospital should know the value of physiotherapy, should know the types of cases most benefited by it, and should send such cases with a prescription stating what it is desired to be accomplished, and leave the filling of such prescription to the director of physiotherapy. In

times of war, it would seem wiser that the department of physiotherapy (or if deemed best, the department of physical reconstruction) should be made an independent department in the hospital, and that for purposes of administration it be made a section of the hospital division in the office of the Surgeon General. It would also seem wiser that, as was done in the late war, the Reconstruction Aides in Physiotherapy, as regards selection, assignment to duty, and transfers, be placed under the director of physiotherapy, in the office of the Surgeon General.

Strictly speaking, occupational therapy should be a part of physiotherapy, or they may be both combined as rehabilitation therapy. In many places occupational theraphy has degenerated into commercial lines and is curative only in the degree that at least for a time it takes the patient's mind off himself. In war, in a military hospital, occupational therapy should be under the director of physiotherapy in order that the following two results may be accomplished:

1. That the manual work should consist of purely curative exercises, muscular re-education being the first consideration. If proper prescriptions are given, the joy of creating something is in striking contrast to the irksomeness of the gymnasium, or even of competitive mechanotherapy. For example, many times during reconstruction days, men with paralized extensors and over strong flexors would be given bead bags to make. Now, bead bags are all right in their place, but they did not fit the above condition. If, on the other hand, we were dealing with a neuropsychiatric case with inco-ordination, especially in the firmer muscle movements, then bead bags would be of undoubted value from a therapeutic standpoint.

2. That the proper academic subjects should be prescribed. It was proved beyond question, here at Walter Reed by Major John Bryant, that the mind, stimulated by such methods, reacted favorably on all other processes of the body. In tubercular and neuropsychiatric hospitals, occupational therapy played a very important part, while in the general hospitals after, under pure physiotherapy, the muscles begin to respond, occupational therapy is of great assistance, as the contraction of a muscle under a voluntary stimulation is far more effective than that produced by any artificial, mechanical

or electrical one. In the army hospitals there are ordinarily five stages in the life history of the case in the department of physical reconstruction.

1. Period of war occupation or physiotherapy, or both.
2. Period of treatment in physiotherapy building and more purposeful occupational therapy.
3. Period of treatment in physiotherapy building, and curative shops or schools.
4. Period in curative shops or schools with physiotherapy, if needed.
5. Attainment of the maximum functional improvement.

Physiotherapy also has a chance to, and does deteriorate. For example, certain insurance companies started their own department of physiotherapy. They made the mistake of placing physicians unskilled in physiotherapy in nominal charge. The work soon degenerated into bake and rub. I have seen joints, which, because of mechanical disabilities, never could have been cured without operation, religiously baked and rubbed for months. Also I have seen stiff knees baked and rubbed and stretched with no attention paid to the quadriceps groups, which were merrily atrophying during this time. Sooner or later such work will bring physiotherapy unfairly into disrepute. This can only be overcome by the introduction into the medical schools and the post-graduate schools of courses in rational physiotherapy and occupational therapy. It is necessary that there should be team work not only between all the subdivisions of physiotherapy, but also with all other branches and specialties of medicine and surgery.

In closing, let me give a few words of caution. Physiotherapy should be practiced on a broad and scientific basis. There should be some good reason for every procedure used. It should be remembered that there can be only four or five effects produced by physiotherapy, namely, chemical, thermal, mechanical, psychical and stimulative. The pathological processes should be considered and the proper physiological remedy should be prescribed. Reconstruction Aides in physiotherapy should not practice it on their own initiative, unless they insist that all cases treated should be referred

through a physician, and that he should have oversight of the progress of the case. And lastly, it should be remembered that physiotherapy is only an aid and an adjunct, often of prime importance, to be sure to other medical and surgical procedures.

**Address delivered at the graduation of the first class of Physiotherapy at Walter Reed Hospital, Washington, D. C.*

The Wisdom of the Strong

A little pluck when hope burns low,
A little laugh when life seems slow;
These are the things that wise men know—
Are you wise?

A little faith in one who's dear,
When mischief whispers at your ear,
And holds the God of doubting near
Your shrinking eyes,

A word of praise to help along
A wearied traveler in the throng,
This is the wisdom of the strong—
Are you wise?

—Author Unknown.

Heard at a P. T. Clinic

P. T.: Good morning, how are you getting along?

Patient: Oh, I have to come back and have more of them ARTISIONS in my shoulder broken up.

There was a thin maiden called Lena
Who bought a new vacuum cleaner,
But she got in the way
Of its suction one day,
And since then no one has seena.

—*Wasp.*

The Chartered Society of Massage and Medical Gymnastics (Great Britain)

By DORA HISLOP.

This Society may be said to have its beginning in 1893, when eleven women interested in the subject of massage and with some training came to realize that something had to be done in order to raise the professional and moral standard of massage, which had fallen into some disrepute.

In 1894 they succeeded in founding the Incorporated Society of Trained Masseurs, and from that time on the society has developed in size and efficiency. A few years ago a rival society was formed and consequently the danger arose that the smaller society, in order to increase its numbers, would be tempted to give its diploma on easier and lower terms. To obviate this and to prevent the recurrence of this situation the two societies amalgamated and were granted a royal charter and since June 9, 1920, have been known as the Chartered Society of Massage and Medical Gymnastics.

The society is primarily an examining body. Examinations are held in London and in various centres throughout England, Scotland and Ireland twice yearly, the subjects being Massage, Medical Gymnastics and Medical Electricity. The conjoint examinations are the first open to students, and include Massage and Remedial Exercises, the society holding that these two subjects are so closely allied that one without the other is incomplete. The examination in Massage, which includes anatomy, physiology, etc., must extend over one year, and for Massage and Medical Gymnastics over eighteen months. The Medical Electricity certificate is only granted to those who have passed the Massage examination and subsequently undergone a three months' training in Electricity. Examinations for those who wish to qualify as teachers are also held. These require a higher standard of knowledge and a further year's training and experience in all branches.

A list of recognized training centres is compiled by the Chartered Society, including Hospital Schools, Massage Training Schools and Physical Training Colleges. The latter have added an extra year to their two years' course of training and now the students take the Chartered Society Examinations as part of their regular work.

The Society demands the registration of all its members and has an Appointment Bureau through which its members may apply for work. Besides this, under the auspices of the Society, lecture centres have been formed in the leading cities and the co-operation of the medical profession has done much to make those lectures invaluable to the working Masseurs. The Journal of the Society, which has a large circulation, is also helpful in keeping those members working abroad and in outlying districts up to date.

In London arrangements have been made for the formation of a first-class club and this example will probably be followed later by the smaller cities.

To the older members, the passing of the familiar initials I. S. T. M. must be a matter of real regret, but it marks an important step forward in the history of Massage in Great Britain. The result of the struggle of those eleven women nearly thirty years ago is that 7,000 men and women are engaged in a profession which is highly respected and honored throughout the country.

If you are contented with your lot you are either very old or very worthless.—*Brookline Chronicle.*

New Members

Sue B Swartzlander, 108 Ardmore Ave., Ardmore, Penn.

Rhea K. Riedel, 1391 E. 110th St., Cleveland, Ohio.

Oscar S. Nissen, 25 Huntington Ave., Boston, Mass.

Helen S. Willard, U. S. V. H., No. 76, Maywood, Ill.

The reason so many of us never get there is that we substitute wishing for hard work.—*Boston Transcript.*

A hobby does not necessarily mean an avocation apart from the bread winning occupation. It may not be pure fun or what passes for recreation. A man may, as Dr. Eliot urges, find his pleasure in his work. His hobby may be his every day calling. A hobby is a ruling passion, whatever it may be and each of us needs one to be thoroughly alive and entirely human.—*Philadelphia Public Ledger.*

New Books

Dr. Chris Sampson is publishing a book which should shortly be off the press, "Physiotherapy Technique." C. W. Mossby Co., North Street, St. Louis, are the publishers.

Let me but find in my heart to say,
When vagrant wishes beckon me astray,
This is my work, my blessing, not my doom;
Of all who live I am the one by whom
This work can best be done in the right way.

—*Van Dyke.*

Empty hours lead to an empty head and an empty head leads to empty pockets.—*Forbes Magazine.*

The P. T. Review

Published Quarterly by the American Physiotherapy Association

Boston, Mass.

Beginning.....send me until further notice THE P. T. REVIEW, for which I agree to pay $1.00 annually. ($1.00 enclosed).

NAME.....

ADDRESS.....

WINIFRED TOUGAS, *Subscription Manager*
9 Bellingham Street
NEWTON HIGHLANDS, MASS.

Physiotherapy Apparatus

High Frequency Transformers

The Morse Wave Generator

Roentgen Ray Apparatus

Alpine Sun and Kromayer
Ultra Violet Ray Lamps

General X-Ray Company

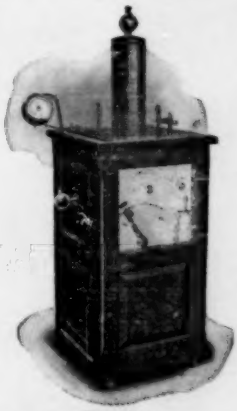
420 Boylston Street
BOSTON

212 E. 23d Street
NEW YORK

A PAIR OF RESULT GETTERS

You would enjoy using
Our Instructive Bulletins
and Reprints
gladly sent on request

The New Model
1058 Polysine Generator



The Hogan
High Frequency Apparatus

McINTOSH ELECTRICAL CORPORATION

Successors to McIntosh Battery & Optical Co., Established 1879

Main Office and Factory, 223-233 N. California Ave., Chicago, Ill.

Gentlemen: — Please send Special Literature and Reprints with full details regarding

the ..... to .....

Address .....

Equipment of Proven Efficiency

For nearly thirty years Victor Physical Therapy apparatus has served an important role in the advance of this now generally accepted branch of therapy.

Those who were identified with the work in the Army, Navy or Public Health, have seen, have used Victor apparatus, and know that it is scientifically designed to deliver the various modalities in their true form. It proved itself in quality and durability.

Careful research, in co-operation with the profession, to keep Victor apparatus abreast of present day requirements and in view of future requirements, is unceasing. It is simply following out the Victor policy of these many years standing—to offer only that than which there is none better.

Victor X-Ray Corporation

General Offices and Factory

236 South Robey St. Chicago

Sales Offices and Service Stations in all the Principal Cities

New York School of Physiotherapy

Offers a practical and theoretical course in Massage, Medical and Hygienic Gymnastics, Electro and Hydrotherapy. Strong Faculty. American and Swedish Instructors.

Diploma, Patients and Positions Secured.

Address

CARL S. HALL, Director

616 Madison Ave., New York City

Tel. Plaza 1349 and 1470

New Haven School of Physiotherapy

CONTINUOUS SESSIONS — FOURTH YEAR

Intensive courses of six weeks each including Summer Session, in theory and practice of PHYSIOTHERAPY. Prepares for government work under the Civil Service; also for hospital and private practice. Extensive experience in actual treatment of patients by large electrical equipment. Fifty graduates now in service. Post graduate courses for ex-service aides.

Requirements: High School graduation, plus two years of physical education, nursing, or collegiate work.

For further information address

HARRY EATON STEWART, M. D.
Director
420 Temple St., - New Haven, Conn.

THE BROOKLINE PRINT